



CHEMISTRY NMDCAT

(UNIT- 8)

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03418729745(WhatsApp Groups)

SAEED MDCAT TEAM

TOPICS

✓ **CHEMICAL BONDING**

- Q.1** The percentage of ionic and covalent character in HF is
a. 20, 80
b. 80, 20
c. 57, 43
d. 43, 57
- Q.2** The bond energies of F_2 , Cl_2 , Br_2 and I_2 are 37, 58, 46 and 36 kCals respectively. The strongest bond formed is in
a. F_2
b. Cl_2
c. Br_2
d. I_2
- Q.3** In water bond angle is 104.5° and it is less than normal tetrahedral value because
a. Bond pairs moves away from each other
b. Bond pairs moves away from lone pair
c. Bond pairs come close to each other
d. Both b and c
- Q.4** sp^3 hybridization is not important in describing the bonding in
a. NH_4^{+1}
b. CCl_4
c. H_2O
d. $AgCl$
- Q.5** Which shows non directional bonding
a. BCl_3
b. $CsCl$
c. $BeCl_2$
d. PCl_5
- Q.6** In the formation of a compound AB, an electron is transferred from an atom A to atom B, then?
a. A is divalent
b. B is oxidized and A is reduced
c. The compound AB is covalent
d. The compound AB is electrovalent
- Q.7** In ethylene molecule, the sigma bond is formed by _____ overlapping
a. $sp-sp$
b. sp^2-sp^2
c. sp^3-sp^3
d. $sp-sp^3$
- Q.8** Which of the following has highest bond energy
a. H-H bond in H_2
b. C-H in CH_4
c. $N \equiv N$ bond in N_2
d. $O = O$ bond in O_2
- Q.9** In which of the following molecule triple covalent bonds are present
a. CH_4
b. H_2
c. N_2
d. NH_3
- Q.10** When sodium and chlorine react, energy is
a. Released and ionic bond is formed
b. Released and covalent bond is formed
c. Absorbed and covalent bond is formed
d. Absorbed and ionic bond is formed
- Q.11** Which of the following molecule has largest number of shared pair of electrons?



a. NH_3

c. C_2H_4

b. CO_2

d. N_2

Q.12 Elements whose electronegativities are 1.0 and 3.0 would form

a. Ionic bond

c. Co-ordinate bond

b. Covalent bond

d. Metallic bond

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- Q.13** The bond between atoms of two elements of atomic number 17 and 19 is
- Covalent
 - Ionic
 - Co-ordinate
 - Metallic
- Q.14** The most shorter bond is in ____ and most stronger bond is in ____
- F_2 , F_2
 - F_2 , I_2
 - Cl_2 , F_2
 - F_2 , Cl_2
- Q.15** In which of the following theories the hybridization is considered
- VSEPR
 - LFT
 - MOT
 - VB
- Q.16** In which of the following compounds, the bond has the largest percentage of ionic character
- H_2O
 - HF
 - HBr
 - HCl
- Q.17** The correct order of decreasing polarity is
- $HF > H_2O > NH_3$
 - $HF > H_2O > NH_3$
 - $HF > NH_3 > H_2O$
 - $H_2O > NH_3 > HF$
- Q.18** Which of the following is non-polar but contains polar bonds?
- HCl
 - H_2O
 - CCl_4
 - SO_2
- Q.19** MgO is used to line industrial furnaces because it has very high melting point. Which type of bond needs to be broken for MgO to melt
- Ionic
 - Covalent
 - Co-ordinate
 - Metallic
- Q.20** The suitable representation of dot structure of nitrogen molecule is
- $N:::N$
 - $:N::N:$
 - $:N:::N:$
 - $N:::N$
- Q.21** Which is not true in case of ionic bond?
- It is linear bond
 - No bond is 100% ionic
 - It is formed between two atoms with large electronegativity difference
 - Its electronegativity difference is less than 1.7
- Q.22** Which compound has minimum bond length between
- C–C in ethane
 - C = C in ethene
 - C–Cl in CCl_4
 - C = O in acetone
- Q.23** H–O–H bond angle in H_2O is 104.5° and not 109° because of more space occupied by
- High electronegativity of oxygen
 - Bond pair – bond pair
 - Lone pair – lone pair
 - Lone pair – bond pair
- Q.24** BeF_2 has no dipole moment because of?
- Covalent bond
 - Linear and symmetrical structure
 - Non-linear structure
 - No charge displacement
- Q.25** Which of the following species assumes planar structure?
- CH_3^+
 - CH_4
 - CH_3^-
 - BF_4^-
- Q.26** The bond formed between boron trifluoride and ammonia is
- Ionic bond
 - Dative bond
 - Hydrogen bond
 - Covalent bond



- Q.27** A π -bond is formed by sideways overlapping of
- s – s orbitals
 - p – p orbitals
 - s – p orbitals
 - sp – s orbitals
- Q.28** Bond angle in NF_3 is more closer to bond angle in
- NH_3
 - H_2S
 - CH_4
 - H_2O
- Q.29** The compound which contains both ionic and covalent bonds is
- CH_4
 - KCN
 - H_2
 - KCl
- Q.30** The bond angle is maximum in
- H_2O
 - CO_2
 - NH_3
 - BF_3
- Q.31** If a molecule MX_3 has zero dipole moment then σ -bonding orbital used by M (At. No. < 21) are
- Pure P
 - sp hybridized
 - sp² hybridized
 - sp³ hybridized
- Q.32** The total number of sigma bonds and pi bonds respectively present in one molecule of ethene are
- 4 and 1
 - 5 and 1
 - 4 and 2
 - 3 and 2
- Q.33** Bond angle in NH_4^+ ion is
- 180°
 - 120°
 - 109.5°
 - 104.5°
- Q.34** The shape of carbonate ion (CO_3^{2-}) is
- Tetrahedral
 - Trigonal planar
 - Square planar
 - Hexagonal
- Q.35** The hybridization of carbon in ethylene, graphite and diamond is respectively
- sp³, sp³, sp³
 - sp², sp³, sp³
 - sp, sp², sp³
 - sp², sp², sp³
- Q.36** The strongest bond is present in
- $\text{C} \equiv \text{O}$
 - $\text{C} \equiv \text{N}$
 - $\text{N} \equiv \text{N}$
 - $\text{C} \equiv \text{C}$
- Q.37** Octet rule is not followed by
- NF_3
 - CF_4
 - CCl_4
 - PCl_5
- Q.38** In which of the following molecules central atom is not sp³ hybridized
- NH_4^+
 - NH_3
 - NH_2^-
 - CO
- Q.39** Bond energy is independent of
- Atomic size
 - London forces
 - Bond length
 - Bond order
- Q.40** Structure of SnCl_2 is
- Tetrahedral
 - Linear
 - Bent
 - Trigonal



Q.41 How many covalent bonds are expected to be formed according to Lewis concept in the following three atoms



- a. 2
b. 4
c. 3
d. 8
- Q.42 Which overlapping may not lead to sigma bond formation
a. p-p in fluorine
b. s-p in hydrogen fluoride
c. sp^2-sp^2 in benzene
d. p-p in ethene
- Q.43 Ionic bond with greater ionic character is mostly formed between elements of
a. IA and IIA
b. IA and VIIA
c. IA and VIA
d. IIA and VIIA
- Q.44 How many number of non-hybrid orbitals are present in ethene
a. 0
b. 1
c. 2
d. 4
- Q.45 In which of the following compound, central element is electron deficient
a. CH_4
b. AlCl_3
c. PH_3
d. SiCl_4
- Q.46 Bonds in calcium carbide between carbon atoms are
a. Two pi
b. One sigma and one pi
c. One sigma and two pi
d. Ionic (no sigma, no pi)
- Q.47 % age of ionic character in the compound can be calculated by
a. $\frac{\mu_{\text{ionic}}}{\mu_{\text{obs}}} \times 100$
b. $\frac{\mu_{\text{obs}}}{\mu_{\text{ionic}}} \times 100$
c. $\frac{\mu_{\text{ionic}}}{\mu_{\text{obs}}} \times 1000$
d. $\frac{\mu_{\text{obs}}}{\mu_{\text{ionic}}} \times 1000$
- Q.48 The Electrovalent bond is present in:
a. CaO
b. F_2
c. H_2O
d. NH_4^+
- Q.49 How many unshared pairs of electrons are present in chlorine molecule according to Lewis dot and cross model:
a. 1
b. 4
c. 2
d. 6
- Q.50 Which of the following technique is used to measure the bond length of bonded atoms
a. X-Ray diffraction
b. Neutron diffraction
c. Microwave spectroscopy
d. All of these



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Chem T-8

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	16	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	31	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	46	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	17	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	32	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	47	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	18	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	33	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	48	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	19	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	34	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	49	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
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